

1154-94-1678

Kathryn Haymaker* (kathryn.haymaker@villanova.edu), **Jessalyn Bolkema**, **Katherine Benson**, **Christine A Kelley**, **Sandra Kingan**, **Gretchen Matthews** and **Esmeralda Natase**. *On graph substructures that impede the interval passing algorithm in compressed sensing*. Preliminary report.

In compressed sensing, sparse measurement matrices are used to recover k -sparse signals. The Interval Passing Algorithm (IPA) is an iterative algorithm that operates on the bipartite incidence graph of the measurement matrix. Sparse Tanner graphs that are used to define error-correcting codes can also be used as measurement matrices. Yakimenka and Rosnes (2016) showed that graph structures called *termatiko sets* characterize the IPA failure in this context. In this talk we determine the minimum size of *termatiko sets* for classes of combinatorial codes, including codes from finite incidence structures. Using observations from this analysis, we construct matrices that avoid small *termatiko sets*. (Received September 16, 2019)